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Subject: Type I Progress Report

Date: September 22, 1972
Title of Investigation: Automated Thematic Mapping & Change Detection of ERTS-A Images.
Proposal No.: MMC #074
Principal Investigator: Nicholas Gramenopoulos, GSFC ID: PR504
Contract No.: NAS5-21766
Reporting Period: July 16 through September 15, 1972.

Discussion

I. Data Received

On August 12, 1972, we received from MSC, imagery of the New Orleans test site obtained by an RB57F aircraft. The overflight occurred on May 18, 1972.

On September 11, 1972, we received from MSC, imagery of the New Orleans test site obtained by an NC130B aircraft. The overflight occurred on July 9, 1972.

On September 12, 1972, we received two sets of imagery from NDPF which had been acquired by the ERTS-1 satellite on July 26, 1972. One set of images covers an area of the Texas-Mexico border showing clearly the Rio Grande and the Falcon Reservoir. This area lies northwest of my Weslaco test site and it includes a very small portion of the northwest corner of the test site. The other set was mistakenly sent to us and we have returned it.

Our entire Cascade Mountain test site was acquired on July 28, 1972 by the satellite with less than 25% cloud cover. We were supposed to receive the imagery on September 12, but due to the mix-up, we received the wrong data instead. NDPF has been informed and will send us the Cascade Mountain imagery as soon as possible.

In summary, during the reporting period, the ERTS-1 data received was not suitable for processing. We anticipate though that the imagery from the Cascade Mountains will be suitable and we will process it as soon as it becomes available. The aircraft imagery of the New Orleans test site is satisfactory and we are proceeding with the computer processing of the RB57F imagery as originally planned.

II. Processing Operations

In processing the RB57F imagery, we discovered some minor inadequacies of our computer software. Individual software packages did not interact as smoothly as anticipated. Other programs did not behave with real data as they did with test data. During the reporting period, we have concentrated on correcting the software deficiencies. The software streamlining is necessary to achieve efficient and accurate processing of the ERTS images by the computer.

III. General Comments

We have spent considerable time examining the ERTS and aircraft imagery and becoming familiar with it. We are very much impressed by the wealth of information available in the ERTS-1 images. Meteorologic, hydrologic and geologic information is readily obvious in the ERTS images. Distribution of vegetation and major transportation networks can also be identified. Close comparison of the imagery to existing maps shows map inaccuracies.

The IR color images from the aircraft are also very impressive.

At this time, it is too early to report any tangible results, but we are very optimistic about the progress of this investigation. In the next reporting period, we plan to complete software modifications, process the RB57F images from New Orleans and the ERTS-1 images from the Cascade Mountains.

Very truly yours,

ITEK OPTICAL SYSTEMS DIVISION

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